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| EXAMINER |
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HENDRICKS, KEITH D

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| ART UNIT | PAPER NUMBER |
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1761

DATE MAILED: 09/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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|------------------------------|------------------------|--|---------------------|--|
| Office Action Summary | Application No. | | Applicant(s) | |
| | 10/619,403 | | CHUKWU, UCHENNA N. | |
| | Examiner | | Art Unit | |
| | Keith Hendricks | | 1761 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>10-17-2003</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claims 1-20 are currently pending in the application.

Claim Rejections - 35 USC § 112

i) The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 12-13 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The claims require the presence and use of an enzyme “effective to degrade methylxanthine.” However, neither the claims nor the specification provide even a single specific enzyme for carrying out this task. Nor do they provide a source for said enzyme, nor guidance for one skilled in the art to locate such an enzyme for use within the claimed invention. Further, proper enablement and sufficient guidance is lacking in the specification with regard to identifying and obtaining such an enzyme simply by a broadly-recited activity – which may or may not be specific to acting only upon methylxanthine compounds, of which there are many – versus specifically reciting the name (or even an Enzyme Classification indication) of an enzyme such that one skilled in the art would be able to locate and utilize such.

ii) The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 10 and 16-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Art Unit: 1761

Claim 10 recites the limitation “the raw vegetable composition bean”. There is insufficient antecedent basis for the limitation of “the... bean” within the claim, and in claim 9 from which it depends.

Similarly, claims 16-18 recite the limitation “the bean”. There is insufficient antecedent basis for this limitation within the claims, and in claim 15 from which they depend.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-9, 11, 14-16 and 18-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Uhlig et al. (US PAT 3,640,723).

Uhlig et al. discloses the enzymatic treatment of soybean meal “with a pectolytic enzyme alone or in combination with a cellulase, or a cellulase and a hemicellulase” (abstract). According to the bottom of column 1, “the pH value of the suspension is chosen to correspond to the optimum efficiency of the pectinase employed.” This is predominantly within the pH range of 4-6. After enzymatic treatment the enzyme is inactivated by spray drying or drum drying. See example 3 where a 25 percent aqueous suspension of soya meal was treated with pectinase and cellulase, followed by boiling and spray drying. Column 1, lines 40-44 recite the enzymes which may be used in the process, and state that in addition to the cellulase and pectinase, a protease may also be employed.

Thus the claims are anticipated by the reference. Note that soybean meal falls under the general definition of a “bean”, especially given the recitation of claim 17 (which was not rejected), which specifies that “the bean is not modified by grinding, pulverizing, grating, or any combination thereof.” Thus the remaining claims which recite the use of a bean must read upon one which has been ground or pulverized; otherwise the recitation of claim 17 would not be necessary and would not, in fact, further limit the claims from which it depended. It is further noted that in the art, standardized soybean meal has a moisture content no greater than 12%. Finally, regarding the limitations recited in instant claims 2-5, these are considered to be inherent properties of the enzymes or vegetable composition disclosed by the reference, and do not impart any patentability to the claims, *per se*.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

i) Claims 1-8, and 14-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lendvay (US PAT 3,705,810).

Lendvay discloses a method for treating coffee or coffee grounds by one of two main methods, either (A) alkaline treatment or (B) enzymatic treatment. At column 3, lines 39-66, the reference teaches the addition of cellulase, hemicellulase and/or pectinase to “green coffee” (beans) by soaking the green coffee beans in water containing said enzymes. After such treatment, the beans will then be roasted and ground. “The thus treated coffee beans will release more soluble extract than beans which had not been subjected to the enzymatic treatment” (col. 3, ln. 46-48). See also example XI.

The reference does not specifically provide a pH for carrying out the enzymatic reaction. However, one of ordinary skill in the art would recognize that the enzymes would be most active within a given pH range, and since the reference does not suggest altering this pH during the enzymatic treatment, one of ordinary skill would have understood that a pH near neutral (pH 7) would be utilized. Alternatively, one of ordinary skill in the art would also have understood that the pH of such a reaction would be selected to correspond to the optimum activity of the enzymes present (for example, as evidenced by Uhlig et al.), and thus the adjustment of the pH to be slightly acidic in order to provide the optimum reaction conditions, would have been well within the ordinary level of skill in the art to perform. Finally, it is noted that while the reference discloses two separate methods, the alkaline treatment (“method A”) may be followed by a step where the coffee is “de-alkalinized, i.e. substantially neutralized” (top col. 3), followed by enzymatic treatment (col. 2-3). Thus, this also further suggests to one of ordinary skill the utilization of the enzymes near a neutral pH range, i.e. about 7.

Thus, while the reference may disclose an ultimate end product or subsequent method of using the product which is different from that which applicant intends, applicant’s broadly-recited claims are considered obvious over the teachings of the reference.

Art Unit: 1761

ii) Claims 1-9, 11 and 14-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki (US PAT 3,845,220).

Suzuki discloses the production of an “enzymatically-treated coffee liquid.” Such a product is produced “by the action of the enzymes of cellulase, hemicellulase and pectinase” (col. 3, ln. 36-37), “in addition to the respective treatments by protease and amylase” (col. 3, ln. 39-40). The examples disclose the treatment of parched coffee beans (i.e. dried coffee beans which have not been boiled; see col. 1, ln. 34-39) with the enzyme solutions, followed by heat sterilization to deactivate the enzymes. See also the examples.

The reference does not specifically provide a pH for carrying out the enzymatic reaction. However, one of ordinary skill in the art would recognize that the enzymes would be most active within a given pH range, and since the reference does not suggest altering this pH during the enzymatic treatment, one of ordinary skill would have understood that a pH near neutral (pH 7) would be utilized. Alternatively, one of ordinary skill in the art would also have understood that the pH of such a reaction would be selected to correspond to the optimum activity of the enzymes present (for example, as evidenced by Uhlig et al.), and thus the adjustment of the pH to be slightly acidic in order to provide the optimum reaction conditions, would have been well within the ordinary level of skill in the art to perform.

Thus, while the reference may disclose an ultimate end product or subsequent method of using the product which is different from that which applicant intends, applicant’s broadly-recited claims are considered obvious over the teachings of the reference.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided

Art Unit: 1761

the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-20 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-15 of U.S. Patent No. 6,033,692. Although the conflicting claims are not identical, they are not patentably distinct from each other because the patented claims describe a method comprising treating dry edible beans (vegetable) having a moisture content below about 14%, at an acidic pH with a cellulase and carbohydrase to hydrate the beans. The instant claims are not patentably distinct from these patented claims.

Conclusion

Examiner's Note:

Claim 10 is currently free of the prior art of record. Reference is made to Hansen et al. (US PAT 5,888,562, of record), directed to the enzymatic fermentation of cocoa beans. The top of column 3 states that "green cocoa [cacao] beans have a polyphenol level which is too high for them to be used in the present process". The enzyme is a protease, and may also include "at least one enzyme chosen from the group consisting of invertases, glycosidases, cellulases, pectinases and oxydases" (col. 5). Thus, there does not appear to be motivation in the prior art to apply the instantly- claimed method to green cacao beans.

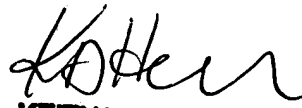
Claims 12-13 are also free of the prior art of record. While the prior art specifically teaches and suggests the use of a cellulase within the claimed method, there is no teaching or suggestion in the art to combine such with a second enzyme which "is effective to degrade methylxanthine", i.e. xanthin-type compounds such as caffeine.

Art Unit: 1761

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Keith Hendricks whose telephone number is (571) 272-1401. The examiner can normally be reached on M-F (8:30am-6pm); First Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Milton Cano can be reached on (571) 272-1398. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


KEITH HENDRICKS
PRIMARY EXAMINER